

Treasury Committee

Oral evidence: [Bank of England Financial Stability Reports](#), HC 681

Tuesday 15 October 2019

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Members present: Catherine McKinnell (Chair); Rushanara Ali; Mr Steve Baker; Alison McGovern; Alison Thewliss.

Questions 177-237

Witnesses

I: Dr Mark Carney, Governor, Bank of England; Donald Kohn, Member, Financial Policy Committee, Bank of England; Martin Taylor, External Member, Financial Policy Committee, Bank of England; and Sam Woods, Deputy Governor for Prudential Regulation and Chief Executive Officer of the Prudential Regulation Authority, Bank of England.

Examination of witnesses

Witnesses: Dr Carney, Donald Kohn, Martin Taylor and Sam Woods.

Q177 Chair: Good morning everybody, and welcome to the Treasury Committee's evidence session on the Bank of England's Financial Stability Report. For this session—this is a bit new—we are including questions suggested by members of the public and directed to the Governor.

As a reminder to those watching, the Bank's preparations for no deal and its latest analysis of a no-deal Brexit were covered in the Committee's session on the inflation report on 4 September, but I am sure they will come up again today.

Thank you very much to members of the public who have suggested questions; apologies if we do not have time in this session to cover the particular question that you may have asked. Thank you also to MoneySavingExpert, which publicised the hashtag #AskTheGovernor as a campaign of the week.

Some of the questions from members of the public will cover topics other than those in the Financial Stability Report; they may not always reflect the Treasury Committee's thinking or that of the members, but we will put as many as we can to you today, Governor. You will no doubt be pleased to hear that we will not be asking you immediately whether you will be appearing on "Strictly Come Dancing", or whether Everton should go back in for Zouma in January, but you are welcome to answer those questions directly on Twitter.

I will start with a question from Jake Findlater on Twitter: "When will your successor be recruited/hired?" We have received a partial response from the Chancellor; he did not give us a precise date, but he did write to us to confirm that the announcement will still be made on 1 February 2020. Has the Bank heard any further details from the Treasury, such as when an appointment will be announced? Presumably you need time to ensure a smooth handover from yourself to the new Governor.

Dr Carney: Thank you, Chair, and I thank Jake for that question.

As you are aware, that is a decision of the Government. The appointment is a recommendation from the Chancellor to the Prime Minister; it is accepted by Her Majesty, and then there is an evidentiary session with this Committee. As you note, the Chancellor has indicated that from his perspective the process is on track, although obviously the Government is quite occupied—as Parliament is—with urgent affairs of state at the moment.

The commitment is to have an orderly transition from myself to the next Governor. There is ample time to accomplish that; there is a wide range of qualified candidates. I would just note in passing that whereas I was appointed several months before I took office, there are examples of other approaches: the most recent president of the ECB, Mario Draghi, was



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appointed a few weeks in advance of taking office, so there is time. There will be an orderly transition, and Jake and the rest of the people of the United Kingdom will have a highly qualified Governor—a more highly qualified Governor—in the new year.

Q178 **Chair:** Okay. I was going to ask, if a new Governor has not been appointed by January, have you considered holding the fort, or would there potentially be an interim period between your departure and a new Governor starting? Have those scenarios been considered?

Dr Carney: They are hypotheticals—it is far too early to consider them. There will be an orderly transition; we have an extremely strong internal team, buttressed for our policy-making committees by external members like the two gentlemen you see here.

Q179 **Chair:** I appreciate that this may not be something that you want to comment on, but Martyn Hogg from north Wales has asked, “Should the recruitment of your successor be a transparent process? For instance, should the Government publish a record of the shortlisted appointments?”

Dr Carney: I think the Government has come a long way over the years in terms of the transparency of the process. There is public advertisement; anyone can apply, and my understanding is that a large range of people did. A headhunter firm was also used to encourage others, domestically and from around the world, to consider the post. There is a process with an independent panel—chaired by the Permanent Secretary of the Treasury, but with external members and the Chair of Court—conducting rounds of interviews to narrow it to a shortlist. As is appropriate, the final decision is then made by the political office holders.

Having gone through this process and a similar process in Canada, I would say that there is a balance in terms of encouraging as many people as possible to apply and having absolute transparency throughout the process. If I can give my personal opinion, I think that in this process the Government has encouraged a very wide range of high-quality people to apply, which has afforded a good set of options for the Government to consider.

Q180 **Chair:** How does the process compare with the appointment processes used for other central banks? Is it more transparent, less transparent or about the same?

Dr Carney: I would have to say, with all due respect, that it is more transparent than two of the other major central banks: the ECB and the Federal Reserve, where there is not this public advertisement and headhunting process with a wider range of candidates funnelled through. It is most analogous to the process used at the Bank of Canada, which is quite similar. As you will be aware, the difference between the two—I don’t want to wade into it; I will just observe—is that in the case of the chair of the Federal Reserve, ultimately that appointment, like most appointments in the United States, is subject to approval by Congress, as is the vice-chair, right?

Donald Kohn: Yes.

Dr Carney: So, approved by Congress in his previous role.

The ECB role is most analogous in that it is an appointment of the European Council—so, an appointment of the Executive—in consultation with the European Parliament, but it's not an approval process at the European Parliament. And as you know, there is a vetting process that this Committee runs, but it is not a formal requirement for the appointment.

Q181 **Chair:** Moving on to the role of the FPC, that is the capacity in which you are appearing before us today, as chair of the FPC and with members of the FPC, as you have done several times before. However, as this session involves more public engagement than usual, may I use this opportunity to ask you just to explain, very briefly, the different responsibilities of the FPC and the Monetary Policy Committee?

Dr Carney: Okay. The Monetary Policy Committee is responsible for keeping inflation low, stable and predictable. The Government specify that on average inflation is 2% over the medium term and, subject to achieving that inflation target, we are responsible for supporting the Government's economic policy—in other words, supporting growth and jobs. There are some circumstances in which we have to balance the two. We saw that most recently following the financial crisis and following the referendum.

So that is the Monetary Policy Committee—low, stable, predictable inflation, or so-called price stability. The responsibility of the FPC, the representatives of which you see here, is financial stability. In effect, we are charged to do a variety of things, but our responsibility is to make sure—I will simplify it to the banks—that the banks are strong enough so that they can serve households and businesses across the country, in bad times as well as good.

Now, our responsibilities are actually for more than banks. It is banks, building societies, insurance companies—the entire financial system, including financial market infrastructure and how the financial market operates. It is how the system works together. So, it's not any individual institution or individual component of the system, but that the system as a whole can serve.

One way I could illustrate that is by saying that there could be circumstances in which financial markets are under more strain, but the banking system can pick up the slack, or vice versa. We think about the system in the round to make sure that it is resilient.

We have a wide range of tools with which to do so; we have an ability to provide recommendations or directions. And if I may, I will just take a moment to reference the third major committee of the Bank of England, which is the Prudential Regulatory Committee, which Mr Woods and I sit on. Its responsibility is the safety and soundness of individual institutions—think banks, building societies and insurers—so that people



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up and down the country can rely on those institutions that their money is safe, and their insurance policies will be honoured.

So, the Financial Policy Committee thinks about the system, so that the system as a whole serves the country, particularly during bad times as well as in good times; it is easy to serve the country in good times. The PRC focuses on the individual institutions.

Q182 **Chair:** Thank you. You will be glad to hear, Dr Carney, that we will give you a short break, and I am going to ask Mr Taylor, who is due to stand down from the FPC in March 2020, some questions. So, this is your opportunity to share things. What do you feel have been the FPC's greatest successes and where do you think there is scope for improvement?

Martin Taylor: That is an enormous question. I mean, the FPC came into being after the great financial crisis. One way of looking at it is to say it is the committee that we wished we had had before the financial crisis, because the crisis might not have been quite so bad, or the banks might have come through it better—some mixture of the two.

When the committee is set out, its biggest task—of course, there was a big international dimension to this work going on in Basel and in the European Union—is to rebuild the resilience of the banking system. That was the overwhelming task of the early years, and we have moved on from that. I have seen the committee become more confident and clearer about what it is doing. The Governor described the difference between the MPC and the FPC. Price stability is easy to define; you can define it by the inflation rate, and the MPC has a clear numerical target. Financial stability is rather a trickier concept. You sort of know it when you haven't got it. We lived through financial instability and saw what that looked like, but defining it is harder. That makes the committee's work rather different in nature from what the MPC does. We paint on a rather wider canvas.

I have seen the committee get more confident, but we are still at the toddler stage, I would say. We have been going as a fully-fledged committee for less than seven years now. One of the important things that we have to continue to work on is that the financial markets and wider public should understand the work that we do, which is why a session like this is so important. They should be able to understand what we call our reaction function: if something happens, the committee is likely to react in a certain way. I believe that is beginning to happen.

Q183 **Chair:** I was going to refer to the statement that you made in the pre-appointment questionnaire when you joined the committee. You said, "The idea that breakfast tables across the country should echo with arguments about the setting of the Countercyclical Capital Buffer strikes me as far-fetched." Do you think we are any nearer to that?

Martin Taylor: It seems that I was wrong; I think there is a question on your Twitter feed on that subject.

Q184 **Chair:** Returning to you, Governor, the Financial Stability Report states:



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"The FPC is maintaining the UK countercyclical capital buffer rate at 1%." In the interest of greater public awareness and understanding, it might be helpful if you could explain what a countercyclical capital buffer is and how likely it is that the FPC will have to raise it in the case of a no-deal Brexit.

Dr Carney: I thank the people around the breakfast table who sent that question, because this is important at the current juncture. It is also a way to illustrate what has changed since the financial crisis. The first thing to recognise is that the amount of capital that the banks have in the United Kingdom has gone up by more than three times. That is a huge increase in their ability to absorb losses in bad times, to go back to my earlier answer. That means that they have a greater ability to continue to serve households and businesses across the country.

One of the decisions we have taken is to take the big increase in capital and split it into two broad components. One is the minimum standards that the banks have to meet at all times, and those are quite rigorously defined by the PRA, which Mr Woods heads, on a bank-by-bank level. There are certain minima that everybody has to meet, but they have idiosyncrasies that mean a minimum for each bank is higher than the aggregate minimum. On top of those minima, we have buffers. Buffers are things that the banks can draw on when things turn bad, either for them or for the macro economy as a whole. The countercyclical capital buffer, known up and down the land as the CCyB, is like a rainy-day fund. It is a buffer that is built up during good times—during the sunshine. In standard times, the committee thinks that the buffer should be in the region of 1%. It could be a little more or a little less, but it is roughly in the region of 1%.

If sunshine turns to storms or to uncertainty—if I can mix my metaphors here—such as might be the case or would likely be the case in the event of a no-deal Brexit in the course of the next couple of weeks, what the committee has indicated is not that it would raise that buffer, but that actually it would allow the banks to draw on that rainy day fund. What that means is that they can absorb losses that they might incur, because of developments in financial markets or some loans that may go poorly; they can absorb those losses and not worry about hitting a minimum level too quickly.

To put numbers around it, the size of that 1 percentage point buffer is about £11 billion of capital. Given the banks lend on top of that capital, that is equivalent—that gives them balance sheet space to potentially, in an extreme, more than cover, several times over, the annual lending to the economy. Last year, the annual lending to the economy—to households and to businesses—by the banking system was about £75 billion. On letting the banks draw on that rainy day fund, by building it up in good times, which is what we have encouraged, in fact required, the banks to do gives us the opportunity—it's still a decision we would take, but we have said we are minded in this direction—to release some or all of that buffer, if it is needed, so that the system can continue to lend.



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It is a very timely question, it is an important part of the system and we constantly are thinking about how we balance—we know the system needed a lot more capital. That's one of the big lessons from the crisis. But it's also about having the capital in the right place and with the right flexibility.

Martin Taylor: May I just add to what the Governor has said? If you recall, in the great financial crisis the banks took losses and stopped lending. The intention of the buffer structure, if we get it right, is that they can take losses and carry on lending.

Q185 **Chair:** I guess that brings us back to the breakfast table discussion and the fact that the FPC report says: "Most risks to UK financial stability that could arise from disruption to cross-border financial services in a no-deal Brexit have been mitigated." I think that for some households the confidence that is being given in terms of financial services—for many households, it won't necessarily translate to them in the same way. Is there not a risk that, while you are focusing heavily on maintaining financial stability and buffers in the event of disruption to financial services, there is sometimes a disconnect with the real experience of ordinary households, which are likely to face an entirely different story when it comes to the impact of a no-deal Brexit? How do we make sure that it doesn't come across as a bit ivory tower?

Dr Carney: Well, it has real-world consequences. The question is absolutely well motivated, because there are effects that can happen in the real economy and there are effects that can happen in the financial system, and if we don't deliver on financial stability, the financial system will absolutely amplify and make worse the effects in the real economy.

There are likely to be circumstances, in an abrupt no-deal Brexit, where certain businesses become uneconomic and close. The person who runs that business or works for the business, or someone in the family of people who work for the business, will be directly affected by that. The fact that the banks are operating, and the financial system is operating, is interesting, but the most immediate, substantive effect on their life is the closure of that business because of the loss of a market or, potentially, shorter-term disruption in the event of a no-deal Brexit.

But there are a large number of other businesses that either will not close or will be able to continue to expand, because they are viable businesses and they can continue to access funds from the banking system. There are mortgages that will be written, will be taken out, after Brexit—whatever form it takes—that, again, if this system were not viable, would not otherwise occur. People can have total confidence in their savings in these institutions. Their insurance policies will continue to be met. One of the things, which is just taken off the table, is that the PRA—Mr Woods and company—have spent the last few years working to provide temporary permissions to EU providers of financial services in the UK. If 1 November is Brexit day—in other words, no-deal Brexit, no transition period; in other words, a hard Brexit—those people around the Brexit table do not have to



switch financial institution and are still covered by their insurance contract and so on.

Sam Woods: Perhaps I should just add very briefly, I think people can and should expect us over the last two to three years to have spent a lot of time, which we have done, fixing plumbing issues that could arise in the financial system in the event of a no deal. That is what we have spent a huge amount of our effort doing. We have got quite comfortable with the position that we have got to. I want to emphasise the word “most” that you used, Chair. In effect, what we have got is a pretty complete fix, not least through the temporary permissions regime, which this Committee had an important role in bringing to life at the UK end. At the EU end we have a rather less complete fix. For example, there is an issue that we are looking at relating to direct debits and whether more information will be needed from some customers to make those work smoothly in the event of a no deal. I want to emphasise the “most”, but people should feel that we have covered a lot of ground within the financial services sector.

Q186 **Chair:** I have one other question about resilience. The deputy governor, Jon Cunliffe, has said that adjustment to an environment of long-term low interest rates is likely to put “upward pressure on financial sector risk taking and downward pressure on resilience.” Is that an assessment that you agree with?

Dr Carney: Certainly, it is something that we guard against. One of the tools we use is to undertake stress tests of the banking system. Almost two years ago, we stress tested exactly against this issue. We have been through a long period of low interest rates. I am sure we will get to discuss the impacts of that, but we have looked at this perpetuating itself for a period of time, which is a real possibility, and then what happens to risk taking and what levels of resilience the banks have to have—not just the banks, but the broader system. I keep bringing insurance companies in because that is a big part of our responsibility, and a low interest rate environment is particularly difficult. It is tough for banks and tough for savers, obviously, but it is very difficult for insurance companies, and they need to build their strength in order to withstand this.

Sam Woods: Just to give you two examples of what Dr Carney just mentioned, one on the banking side is the figure we have put into the Financial Stability Report. In the last year before we published that report, the proportion of the flow of new mortgage lending in this country that was 90% LTV or above was 18.7%, and that was post-crisis. It is higher now. It partly reflects what has been happening with house prices, but it also says something about risk appetite at banks, which is pretty strong, and I think we need to keep an eye on that.

On the insurance side, exactly as Dr Carney said, the low rates of return that insurance companies and the people investing with insurance companies can achieve through assets like corporate bonds are leading insurance companies to invest more and more in illiquid assets, which have a higher return. That is basically a good thing. We think it is a

sensible place for illiquid assets to go, but we need to watch carefully to make sure that policy holders' money is not being put at undue risk.

Donald Kohn: If I could relate that back to the countercyclical capital buffer, if we saw risk building up inside the banking system in terms of loans in the UK to UK households and businesses, that would be a time to raise the countercyclical capital buffer. When the sun is out and good times are rolling, people get complacent or they search for yield and take risks. That is when we would look to raise the countercyclical capital buffer, if we saw those risks building up.

In relation to something that Mr Taylor said, we are also looking outside the banking system. One of the things that happens if people really are looking for extra yield in a low-interest environment is that they might take risks in their investment decisions and then create unstable situations if they change their minds all of a sudden in a bad situation. Both inside and outside the system, it is our job to look for those risks building up.

Q187 **Chair:** That brings me to the public interest that there has been in the shorting of the pound or of shares of UK listed companies, whereby hedge funds and others bet on the value of the pound or shares falling, which could potentially have an impact on financial stability. Would that influence the Bank's response in the event of a no-deal Brexit?

Dr Carney: That is an important question. Mr Woods gave an important qualification of some of the plumbing issues that could still be there, and I underscore that.

What does financial stability not mean? It does not mean market stability—that is one of the things it does not mean. In other words, developments over the course of the next several weeks will have material impacts on the value of the pound, the value of shares, the cost of debt for UK banks and companies, in either direction, depending on how those developments transpire. The system can handle those changes and the system will reprice those assets, but there will be material moves. We have seen some in the last few days.

With respect to the foreign exchange market, as you know, that is a very large market now. It is a \$6 trillion market daily, with \$800 billion traded daily in sterling against various currencies. Every day, \$800 billion is traded. There are a wide range of counterparties, mostly financial. Of that total volume, less than 10% is exchanged by companies and individuals, so it is our pension funds, asset managers in banks, broker dealers and hedge funds as well. Some people long the pound, because they think it is going to go up, and some short the pound, because they think it is going to go down. There is a range of views. Right now, the biggest thing that we can all see that is driving the movements in the currency is developments in the Brexit negotiations; a sentence here or there this morning or this afternoon can have a material impact on the level of the pound.



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The foreign exchange is not a regulated activity. Unlike the securities markets, which are regulated, it is not. I should be clear that I mean the spot foreign exchange; the daily value of foreign exchange is not regulated.

The Bank catalysed something called the Fair and Effective Markets Review several years ago, which brought in, among other things, a code of conduct for the FX market—a global code. The Bank of England led a process to get a global code of conduct for people who participated in the foreign exchange market. That is now in all major jurisdictions—16 jurisdictions.

A series of principles are required, which govern the behaviour in that market, including, particularly, not using client information—these things are obvious, but it is in a code; I will get to where the teeth are in the code in a moment—not spoofing the market, not doing trades to mislead where activity is going, among other points, and general requirements for ethical behaviour.

What is unique in the United Kingdom is that we have tied that code and other codes and standards to something called the senior managers regime. You will know this, but I will lay it out for the public watching. It is what they would expect—that the senior-most people who run these organisations have direct, personal responsibility for the conduct up and down their organisation.

If they have adhered to the FX code, which they have to do if they are going to deal with the Bank of England—that is one of our requirements—they have to train their people, they have to oversee their people and they have to discipline their people, and there have to be consequences not just for the compensation and livelihood of those individuals, but also of their own, if they are the CEO, CFO or chief risk officer of a bank. That is different to what it was prior to the crisis, and it was a contributing factor to the crisis.

The last point I would make is that there was one other recommendation that was part of the Fair and Effective Markets Review at the time to which we still ascribe. The market abuse regulations—so extreme, criminal market abuse—apply to other parts of the financial markets in London, but not to spot FX. In our judgment they should. It is criminal, so it is a legislative question. There are lots of issues for Parliament to look at, but in due course. Maybe I can just read into the record that we continue—at least I continue—to support criminalising market abuse in foreign exchange.

Q188 Chair: That was a really helpful explanation, and I guess the big concern is that after the financial crisis that highly risky behaviour paid off for a huge number of people, and the disincentives were not there. You have already said that you would like to see that criminal responsibility attributed, but I guess the anxiety of the public is that these things are always analysed after the event. Are you confident that there is enough in place now to disincentivise that behaviour?



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Dr Carney: Again, let's bring it to financial stability concerns if we may. What is very likely to happen—I don't know what is going to happen in the next few days, from now till the end of October, but something is going to happen, and this process is going to break one way or the other and the pound is going to move either up or down: there is great investment advice from your Governor. But it is going to move in one direction or the other. From a financial stability perspective what we care about is that the core of the system—the big banks, particularly—are not making a big bet on that, and that they can't be caught out by being wrong.

If you cast your mind back to the night of the referendum, at about 10 o'clock at night—the eve of the referendum; everyone had voted but the votes had not been counted—the betting probabilities and the positioning of the market were something less than 20% that leave would win. So, on the market, some were right but most of the market was wrong-footed, and there was a big move. The banks were absolutely fine, and the reason the banks were absolutely fine is that our supervisors in advance had made sure that they did not have big open foreign exchange positions, so they weren't betting on it going up, if you will, or positioned for it to go down sharply. They were neutral, and the major banks today in the UK are neutral, to the effect that they are in a position where they could be shut out of the foreign exchange market for 14-plus trading days—which is unprecedented—in dollars, in euros and in yen, I guess; right?

Sam Woods: Sterling, dollar, euro.

Dr Carney: So that ensures that when there is a sharp move or moves, whether anticipated or not, the banks just keep functioning—and that is on top of what we talked about earlier in terms of capital and the CCyB and other precautions that have been put in place. It doesn't address the issue—nor should we be addressing the issue, I would say—that there will be some financial institutions and maybe some individuals associated with those financial institutions who have correctly predicted, or got lucky on, which direction sterling ends up going, and they will potentially make a lot of money; but it won't cascade into the core of the system and it won't amplify it into an impact on the real economy.

Q189 **Chair:** I think we may come back to that, but I have a couple of questions that the public have asked us to put—specifically, one is on open-ended funds. Do you believe the Woodford episode has reminded people that open-ended funds are not liquid all the time, and do you think the structure needs changing?

Dr Carney: Yes, and yes is the absolute clear answer to that. I don't know if my colleagues may wish to expand; but this has been a focus of this committee for some time. We see that there is a structural problem in open-ended funds. It is a problem that is not our direct responsibility; it is a problem in terms of fairness to the individuals who invest in them—a so-called market integrity or consumer protection-type issue. They think that they are investing in something that is akin to a bank account, and that they can get their money out at any time, but as we have seen with the Woodford case and around the time of the referendum with certain real



estate funds, that which is liquid becomes illiquid very quickly, and they can't get their money out. We have views on a number of ways to address that. Again, we come at it from a system perspective—how it could impact the functioning of the system and, ultimately, its ability to fund growth in the economy.

Donald Kohn: I think the structural issue is that investors are promised that they can get their money out today or tomorrow, but the assets that the funds are holding don't trade or trade very infrequently, so it could take months for them to be sold at a reasonable price. If you are an investor in one of those funds and you see something bad coming, like in the wake of the referendum, or you fear something bad coming, you have an incentive to try to get your money out sooner rather than later and not get stuck at the end of the line. When investors see a first-mover advantage and pile into the fund to get their money out, that might force the fund to sell these illiquid assets, which will drive down their price and endanger financial stability. It will have contagion or spillover effects. The committee has been working very hard with the Bank and the FCA to identify ways to better align the redemption terms of the fund with the liquidity of the assets that they are holding.

Q190 **Chair:** One other public concern that has come through from the questions that have been suggested is about the deposit guarantee scheme in the event of a no-deal Brexit. What will happen to the protections of the financial services compensation scheme, such as those for insurance products, under no deal? Are consumers likely to be at risk if they are not covered by the scheme if the UK leaves the EU without a deal? What is being done to mitigate those financial risks more broadly?

Sam Woods: Chair, perhaps I could take that one. I will begin with deposits and then come to insurance. If you have a deposit with a bank that is authorised by the PRA to operate here in the UK, you will be covered in the event of no deal. The important point for people to register is that that is not just UK banks; it is also all the EU banks that have notified into the temporary permissions regime.

The temporary permissions regime is probably the single most important thing that we between us have done. 407 firms have notified into it at the PRA end so far, so it has been very successful. Likewise, at the EU end, if you are an EU depositor into an EU institution, whether it is an EU bank or it fits an EU branch of a UK bank, you are relying on the host state—the EU state in that case.

That is the banking side, but inevitably insurance is a tiny bit more complicated. The first bit of it is the same: for existing policies, if you have a policy with a UK-authorised insurer, including all those EU27 insurers that have notified into the temporary permissions regime, you are covered in the same way as you are today in the event of no deal. The same logic that I have described for deposits applies at the EU end.

There is only one wrinkle for existing policies on the insurance side. You may remember from our previous hearings that there is about 60 billion of



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liabilities that UK insurance companies have to EU27 policy holders. The insurers have been moving those policies into units in the EU27, and by the end of this month 55 billion out of that 60 billion will have moved. If you happen to be one of those policy holders, the position is that you are covered by the FSCS for events that occurred while your policy was in the UK—in other words, prior to it being transferred. After it has been transferred, you are covered by whatever arrangements there are in the new country. It might sound a bit complicated, but it is actually pretty sensible, because once the contract has moved to an EU27 institution and it is with an EU27 policy holder, it really doesn't have anything to do with us any more. So that is the one wrinkle. Finally, on insurance going forward, it is essentially geographic: UK risk insured with a UK insurer is covered by the FSCS; and the EU27 risk would be covered by whatever arrangements have been made in that jurisdiction.

Q191 **Chair:** Presumably, some people fall between the cracks?

Sam Woods: I don't think anyone will fall between the cracks, but the arrangements for a small number of people—for example, and relatively small in the scheme of things, those EU27 policy holders who have moved from a UK entity to an EU27 entity—are not falling between the cracks. However, if they are moving for future events to the arrangements that exist in the EU27—perhaps where your point is most resonant—the coverage that we offer for insurance here in the UK under the FSCS is very much at the more generous and expansive end, relative to what is offered elsewhere.

Q192 **Rushanara Ali:** My questions are going to be about stress testing for climate change. The Governor of the Bank of England has said that up to \$20 trillion in assets could be wiped out if the climate emergency is not tackled and addressed effectively. We know that the City remains the world's major centre for ground fossil finance and it supports directly or indirectly about 15% of global CO₂ emissions, particularly in the oil, gas and mining sector. Certain banks are particularly advanced in that direction. The Financial Stability Report notes that the Bank will test the UK financial system's resilience to the risks of climate change and transition to a low-carbon economy. Will you explain how climate change could lead to financial instability, and what the FPC and the financial sector are doing to mitigate the threat?

Dr Carney: Thank you for the question. With climate change, two types of risk can affect financial stability. The first is most familiar to all of us, and most familiar in financial terms to the insurance world, which is physical risk from extreme weather events. Broad brush, as you know but just to be clear, those have gone up more than threefold over the course of the last few decades and the insured losses have gone up by about five times—so, inflation-adjusted insured losses from extreme weather events have gone up by that order of magnitude.

Property and casualty insurance businesses in the UK and the reinsurers in the Lloyd's market are very sophisticated about this risk. They also have the advantage that most of their contracts are repriced every year, so

they adjust the coverage and the pricing, and they are seeing effectively yesterday's tail-risk extreme event becoming today's more likely central scenario. They are familiar with that.

Those physical risks have some impact on bank balance sheets but, at this stage, they are relatively modest, because the banks are not insuring against damages. Where they see damages could be in physical property that is uninsured, or not fully insured, or in some extreme cases, there have been impacts on supply chains and then the viability of businesses.

Those physical extreme weather events, though, are likely to continue to increase over time—certainly on most assessments of the trajectory of the degree of warming is that the world is headed to at least 3.5—potentially more—additional degrees Celsius on preindustrial levels before the climate stabilises. That is not consistent yet with net zero, the legislated objective of the United Kingdom. So, there is physical risk, and physical risk increasing over time, and I will come back to how that could affect the banks themselves.

The second group of risks, however, are related to so-called transition risk. The transition risk comes about from a variety of factors, but part of it is actually climate change policy itself. As certain activities become prohibited, or subsidies for very carbon-intensive activities are removed, or the extent to which there is carbon pricing and that carbon price gradually increases, the economics of a huge range of activities will change.

It is a question of which business models of the banks' borrowers, but by extension the banks, are resilient to those changes over time. In other words, has a business thought through the fact that different energy sources will be used, that the price of carbon will be going up, that certain activities will not be allowed? That is distinct from the actual physical impacts of climate change. Arguably, those are the bigger risks. There are also transition risks that come from new technologies that shift from being uneconomic, such as wind. We have the crossover now, in terms of many renewables that have crossed over in terms of their economics relative to conventional sources—those are transition risks.

What the stress test does—it is the first of its kind in the world—is look at the banking system and the insurers. In fact, there is a stress test going on right now for UK insurers on climate risk, but let us focus on the one that is referenced in the report, which is related principally to the UK banking system. A discussion paper on it is coming out next month—mid to late November—which will set it out in more detail and solicit comment, then we will revise and start running the test.

Effectively what it does is freeze the banks' balance sheets as they are today and look at those balance sheets five, 10, 20 years out as the UK is on the transition to net zero, as per the legislated objectives, so a set of climate policies that would be consistent with that, or business as usual. Transition to net zero brings with it transition risks with some physical risks. Business as usual does not bring many transition risks but it brings a



lot more physical risks. We are fortunate, being in the City of London, that we have what I would argue is the most sophisticated catastrophe modelling expertise in the private sector resident right here, so we can use that to help to layer on what those physical risks would likely be for those banks. Then we would have a third scenario that would be somewhere in between—late adjustment to get to net zero.

What will a bank have to do in those circumstances? It will have to think about the sectors to which it lends or in which it invests; how ready those sectors or those individual borrowers are for the transition; and whether those companies have a plan and whether it is credible, or they are gambling that some new technology will turn up, or that Parliament and Government are not serious about the transition to net zero so they will not actually have to pay a higher carbon price, or perhaps they just have not thought about it. It starts that dialogue and an assessment of how resilient a bank's strategy is.

Let me finish with two points. First, the lending book of most banks is on average about four years—their corporate lending book. To some extent, most of these effects will happen beyond that horizon. Fossil fuel companies will still be producing for the next four years. Some of the more innovative technologies will not yet be economic. Big manufacturing businesses will be on a path to adjustment but not all the way there.

The question we are trying to get at with them, however, is how resilient their strategy is. In other words, if they are totally oriented to sunset industries, if I can put it that way, from a climate perspective, which do not have a plan and use energy sources that will have to be transitioned off—you can debate about the speed with which that happens, but you cannot argue with the net science; this is a stock not a flow issue—there is less strategic resilience in that bank's strategy than one that is reorienting to sunrise industries, if I can put it that way. That is part of what will be developed through the stress test. Why don't I stop there?

Q193 Rushanara Ali: I have a supplementary related to that. The question is from Lee Betteridge from Dartford. Will committees such as the FPC and MPC and the PRA change their remits so that they actively support the transition to a green economy and reduce inequality?

Dr Carney: Lee's question is very on point. The remits are given to the committees obviously by the Government, ultimately, under the auspices of Parliament, and then we work to fulfil those remits. The Government signalled in July that they expected that the PRA, so individual banks, insurance companies, safety and soundness, and this committee, the FPC, financial stability, should have regard to the Paris agreement in the pursuit of our objectives. Remits normally come with the Budget, so we will see what is in—

Q194 Rushanara Ali: Have they said much more beyond that? Have they given you an indication of when the mandate will change?

Dr Carney: The normal course of remit letters comes around the time of the Budget. As you know, the Chancellor has announced a 6 November

Budget. Every indication, consistent with announcements today, I guess, is that there is a comprehensive strategy being developed—much more needs to be done obviously—consistent with the legislative objective of net zero.

If I can say one other thing, the UK will host—jointly with Italy—COP 26 in Glasgow in November. It's the fifth anniversary of the Paris agreement, which was a landmark agreement. This will be a very important meeting of this COP process. For the benefit of Lee and others—he probably knows—effectively this is a UN process, which has 180-plus countries that work on their own climate policies now. It is not a global treaty; they have their own climate policies.

One of the key elements of that process is likely to be: is the financial sector ready for the transition to net zero? Again, the financial sector is not in isolation going to drive the transition to net zero, but it has to have these skills, such as the ability to assess the riskiness of borrowers over the medium-term time horizon. It has to have those skills, which is one of the reasons why we have started early with the stress test.

Q195 **Rushanara Ali:** Do you think that there is enough of a sense of urgency here? To go back to the point about the 15% direct or indirect contribution from the City in terms of the financing of emissions, obviously the public concern about and interest in this agenda have grown. Some would argue that, current company excluded, financial services and central banks have been running to keep up with public concern, and there is a frustration that not enough urgency is there in terms of policy makers' response.

Dr Carney: There are a few things in that. One is that just in terms of financing fossil fuel companies, there is a transition, and there will be a period of time where carbon continues to be burned. The question is, what is the trajectory? Some fossil fuels have thought more about where they will be placed over that time. It is not clear that in aggregate the potential for stranded assets is appropriately priced yet, but that is partly dependent on how serious Governments are in actually enacting climate policy that influences behaviour and prohibits certain activities. It is related to that.

Q196 **Rushanara Ali:** Some would argue that that is just passing the buck.

Dr Carney: It is not passing the buck. What the financial sector will do, and what it is starting to do, is—credible policy starts with legislative objective, but you have to have policy that backs it up—pull forward and amplify the effectiveness of those policies. I am not advocating this specific policy, but if I can use the example of a carbon price, there are certain estimates, if everything is relied on, of where carbon prices need to go to be consistent with stabilising temperatures. As carbon prices gradually build up, and if there is still political consensus and credibility around that, the market will anticipate that that is going to continue to go up. It will price and value companies and loans to companies consistent



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with that, and which are viable not under today's price, but under a higher price.

I use that as one example, but let's try to put it in the round. The institutions that are most sophisticated when they think about climate change will degree-rate their portfolios. To give an example, the Japan pension fund—the biggest pension fund in the world, with \$1.6 trillion—estimates that its portfolio is consistent with 3.7° warming. That is not a point-in-time estimate, but it is looking at the strategies of the companies and countries that it holds assets of and at where they are headed, where temperatures would stabilise. That is a pension fund that actively manages down that degree warming as one of its objectives.

What does that tell you? Obviously, it is overweight Japan, but the Japan pension fund is a fairly universal investor; it owns a lot of very large indices, with a lot of US Treasuries and so on. Major insurance companies also do this—AXA and Allianz are two examples that are somewhere in the same area. It indicates that if you price the capital markets, all the assets are probably—I am not giving you a precise figure—north of 4° for the capital markets as a whole. AXA prices US Treasuries at 5.4°, to give you an example. Gilts are much lower; I do not have the exact figure to hand, but they are much lower, partly because of climate policy.

It shows what we know, which is that at present the objectives are there, but policy is not yet consistent with stabilising temperatures below 2°. There are some companies that are out ahead, either because of their stakeholders or because they are anticipating that that will change, but there are others that are waiting for the policies to adjust.

I will say that our sense—I will give you two points to support this—is that these conversations about climate-related risk have moved from reputational issues to financial issues. The PRA did a survey of the banks last year; there is £11 trillion of assets in UK-based banks, and three quarters of them now view climate risk as financial risk. That is a big shift in thinking, and they are developing this expertise. To glass-half-full it, the system is not there yet, but that is partly because climate policy is not fully articulated there yet. The virtuous cycle here is that if climate policy continues to move and continues to tighten, the skills are being built up. That is central to the conversations.

One final example: one of the largest banks in the world, a major fossil fuel funder, had 15 questions at its last AGM, and 11 of them were on climate. It is moving, and the skills are being developed. The UK can play a leading role in ensuring that this is properly mainstreamed.

Q197 Rushanara Ali: You refer to policy and so on, but when all is said and done, do you feel that enough action is being taken for us to get a grip on this problem at a Government level, as well as with central banks and others?

As a subset, I will add a quick question from Hillary Corney from Hampshire: "Do you agree with Greta Thunberg, that on a finite planet,



unlimited economic growth is a fairy tale?”

Dr Carney: I am afraid I do not agree with that last point. There is carbon-light growth, there is asset-light growth—there is a range. Just think about the nature of much of consumption—I will talk in very general terms—and the extent to which it has shifted over time towards experiences, including virtual entertainment. That is also growth. If you look at—not to get too techie—some of the developments in national statistics, they are around measuring intangibles, not hard assets. I don’t think that they are exclusive. We can observe where the market is in terms of pricing the transition; it is at least three and three quarters, and probably north of four. That tells you something about the sum of global climate policy. I’ll leave it at that.

On central banks, things have moved quite rapidly, and the stress test is an example. We should focus on what more needs to be done. I am going to make an analogy with any financial stability risk—Brexit is an example. Our job is to ensure the system is ready for whatever form it takes. With respect to climate risk, we need a system that is ready for whatever path society chooses to take. In that regard, we need three things. We need better reporting. Through the FSB and the G20, the Bank catalysed something called the TCFD, which is more comprehensive climate reporting. There are now \$120 trillion of assets that are backing that. It would be sensible, probably in about a two-year timeframe, to make that mandatory. One should have a series of reports by companies and iterations of refinement of those private sector recommendations. That is reporting, but it would make sense to make it mandatory. The EU has signalled that it might do that, and the UK has also talked a bit about it.

Secondly, on risk management, this stress-testing approach—globalising it, at least in the major jurisdictions—makes sense. We need to develop it and get it right, but there is a network that we co-founded with the Banque de France, the Netherlands Bank and the People’s Bank of China. It is now 47 central banks and supervises more than half of global admissions. It works on exactly that, and a colleague of ours, Sarah Breeden, is the senior person who spearheads it.

The third bucket is on the return side. If you have risk reporting and risk management, you have returns. This is a question for society or individuals: how well do you know how your money is invested? Is it invested consistent with net zero? I will make just one comment on that: the scale of the adjustment means that all companies need to adjust. It is not as simple—I wish it were—as saying, “Well, I’m going to invest only in renewable energy.” The system as a whole cannot invest only in renewable energy, and a contribution of a manufacturing or industrial company, in terms of lowering its carbon footprint over the next decade—a big reduction in that—can be as significant, if not more significant, than further development in the short term on renewables. I would suggest that we need a way to assess the extent to which portfolios are invested consistent with net zero.

Q198 **Rushanara Ali:** It is not easy, though, to influence pension funds and



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how investments are done by individual citizens or groups of citizens.

Dr Carney: It is not easy to influence, but it is a fair question to ask whether those individuals should know, in a consistent way, the posture of a fund. It is not as simple as the carbon footprint of the fund, because, again, it might make sense to invest in a company that is actually pretty brown today but intends to become beige, if not green, over the next five to seven years. That is the time you want to invest in it, because it is about transition, not a point in time.

Q199 **Mr Baker:** Good morning. Dr Kohn, thank you for flying in specially to be here. I hope that this largely publicly-led—more directly than usual—session will make it worth your while. What are the risks of the trade war between China and the US instigating a global recession, which could, I think, significantly impact the UK? What are the mechanisms through which such a crisis could occur?

Donald Kohn: I think the threat of a trade war and to some extent the actuality of a trade war, particularly between the US and China, is already having an adverse effect on global growth. You can see it everywhere, especially in the US, but in other places as well. The uncertainty about how this is going to play out is having a very adverse effect on business capital spending. Businesses are putting off decisions. They don't know how the supply chains need to be reconfigured. They don't know what the cost for the inputs and the price for the outputs will be. It is already having an adverse effect on the global economy, which wasn't all that strong to begin with.

In the past couple of days, we have seen a sense of a mini-truce or a stand-down, but it is completely unpredictable and uncertain, and as long as this goes on, it will have adverse effects on global growth. Whether that is strong enough to put the whole world into recession, who knows? But it is bad.

This plays out in a number of different dimensions, one, which we already talked about, is about uncertainty of prices of inputs and outputs, another is the effect on confidence as that is reflected in financial markets. As in the UK, where every Brexit sentence seems to have an effect on financial markets, so in the US, every trade war sentence seems to have an effect on financial markets. Those markets are bringing forward future issues. They are trying to price them in. The degree of uncertainty undermines confidence.

There are several dimensions in which the beginning of a fragmentation of the global trading system is very worrisome. We were talking, to some extent, about the demand side of the economy and confidence, but think about the supply side of the economy, too. Economies are most productive when trading is open, when prices can adjust, when businesses face competition, both abroad and at home, so there are adverse effects in supply and demand.

Q200 **Mr Baker:** You mentioned the change in prices of inputs and outputs. Could you put some quantification around that? I think we are talking



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about tariffs of 20% or so.

Donald Kohn: Currently, I think tariffs between the US and China are in the 20% to 22% range. There is potential for them to go up. Something was postponed for mid-October in terms of US tariffs on the Chinese, but there is still a threat out there in December, depending on how these negotiations go. If I priced it all in, I don't know how high that would go, but 20% is already a big number. We haven't talked about concerns about Europe-US trade and the threat of tariffs on automobiles—the retaliation or the carrying through of the WTO ruling on Airbus and the tariffs the US has put on there. In many dimensions, you can see that we've lost the acceptance that a free-trade global economy is where nations prosper, and that is bad news from a number of perspectives.

Q201 **Mr Baker:** When you say, "We've lost that," which "we" do you mean? I have always liked to believe that the UK—

Donald Kohn: The public in the US and certainly the Administration.

Q202 **Mr Baker:** To what extent would levels of debt in China and Hong Kong—a slightly related issue—influence the UK economy and financial stability in particular?

Donald Kohn: Several UK banks have very major exposure to China and Hong Kong, so they would be directly affected if the problems were not alleviated, or if Chinese growth slowed further and Hong Kong had further problems from an economic perspective. I worry about another aspect to Hong Kong, which is that it is a major financial centre. It helps with the global distribution of capital, but if that is disrupted, other centres will step in—Singapore, London, New York, perhaps even Shanghai to some extent. That is also a disruption and fragmentation of the global capital flows. I think it is a threat.

Sam Woods: In addition to that, in our annual, regular stress testing we cover a very severe slowdown in mainland China and in Hong Kong. To the extent that such events occur, we cover them in something that we call the PRA buffer, which is another part of the readily usable part of the capital stack that Dr Carney was talking about in the first question.

Q203 **Mr Baker:** On that point, we have been asked whether the Bank has combined that stress test with a no-deal stress test. Is that the case?

Dr Carney: Yes. Thank you for raising that. Given the current situation, the banks have been capitalised and are carrying liquidity that is consistent with the unlikely—well, if we were to have no deal and a crystallisation of trade war, and more severe difficulties in China and Hong Kong. That is the level. That is why we have the confidence to say that the system should be resilient to major shock if one were to occur.

Q204 **Mr Baker:** Thank you, and thank you once again for all the work you have done to make that so. Hopefully Jasmine is watching in Wrexham, because she wants to know whether you think that monetary policy still has the available tools to deal with another financial crash or sharp downturn when it occurs.



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Dr Carney: The answer is that it has some tools, and we have the ability and room to adjust Bank rate. The MPC has guided that we could bring Bank rate close to but slightly above zero. As you may recall, we can put in place facilities to ensure that that is passed on to households—there is something called the term funding scheme that we put in place last time. The short answer for Jasmine is that we can lower interest rates. There is some room, and we can ensure that that is passed on to households such as hers.

We have an ability to purchase assets if appropriate, and to provide additional stimulus in both gilts and corporate bonds. Depending on the circumstances, the actions of the FPC can be consistent with promoting financial stability in bad times as well as good—her question goes to a bad time. Such actions include cutting the countercyclical capital buffer, which, all else being equal, provides support for the economy. One advantage of the system in the United Kingdom is that there can be some co-ordination between the committees. It is not one committee telling the other what to do, but it is informed by what the MPC is doing or would do. The FPC can also take action, and vice versa.

Q205 **Mr Baker:** And that has long been your concept of how things should work—I have previously read a speech of yours on that.

Dr Carney: That is correct. To try to bring it down to brass tacks in Wrexham, it is all very well us cutting Bank rate, but if the banks are shutting up shop or not lending that does no good. It is vital to ensure that banks are strong to begin with, and that the FPC can do things to ensure that that adjustment of monetary policy, if necessary, flows through.

Q206 **Mr Baker:** I planned to do this at the end, and time is at a premium, but Sir Jon Cunliffe made a speech yesterday about lower for longer and its effect on financial stability, which was covered in City AM this morning. He said, for example: "My intuition is that, from a financial stability perspective, not all demand management frameworks are equal." I thought that was an interesting observation, given where you were when you made your speech a long time ago about inflation targeting being a framework for all seasons. He also says: "The impact of monetary policy on financial assets and leverage, for example, is a very important consideration." He is talking about what it means to be in a lower-for-longer environment. We obviously cannot go through the whole speech, but do you have any observations on the speech that you would like to share with the Committee?

Dr Carney: Let me pick up on the second one. Thank you for attending to the speech and reading it. It is important. For a variety of reasons, we have been in and are likely to continue to be in a lower-for-longer environment. Naturally, that can bring financial stability risks. There are two options in that. The old option would have been to raise interest rates and accept that you were going to put the economy into recession, but that helps prevent people, companies and banks getting too far ahead of themselves in terms of their borrowing. With the system we have now, it



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puts more pressure, but justified pressure, on the Financial Policy Committee and the PRA—particularly the FPC—to make sure that excesses don't build up either in excesses in household debt, corporate debt or in bank balance sheets. That is part of the reason why over the last few years we have taken a series of steps, which, candidly, have worked. UK households have worked hard, and they have paid down debt; there is a lower level of debt relative to their incomes than there was post-crisis and prior to the crisis. Corporate balance sheets are in pretty good shape and the financial system is very robust. But we have to be forever vigilant around those issues.

Q207 Mr Baker: I would love to spend an hour on that speech, but I have got to move on. Recent IMF analysis suggests that if a major downturn occurs—this very much goes back to the China issue—corporate debt at risk of default would rise to \$19 trillion or nearly 40% of the total debt in eight major economies, and that would be above the level seen during the financial crisis. Perhaps I could return to you, Dr Kohn, and then bring in Mr Taylor. Do you accept that analysis? How well could the UK weather such a level of defaulting?

Donald Kohn: Corporate debt has gotten riskier. There has been a build-up of corporate debt, especially in the US. There has been a large build-up. It is much less so in the UK, but there has been some build-up. The terms of lending, particularly of leveraged loans—loans to corporations that have small levels of capital relative to their borrowing—

Q208 Mr Baker: And therefore riskier loans?

Donald Kohn: They are riskier loans; that has built up as well and the terms of those loans have gotten looser. We have stress-tested the UK banks against very severe downturns and problems in those loan books. The UK banks actually hold very small amounts of leveraged loans or of the derivative obligations derived from packaging those leveraged loans. It has been a focus of our stress tests and is again in 2019. We will be getting the results over the next month or two. We have been very careful to make sure that the UK banks are modelling those risks correctly and have sufficient capital if the worst happens.

Q209 Mr Baker: You talk about the packaging, Dr Kohn. My notes here say to ask you to explain what a collateralised loan obligation is, and I think you just have. It is a packaging-up.

Donald Kohn: Packaging the loans together and dividing the cash flows into some that are even more at risk and some that are less at risk and selling those off to final investors. They can end up in credit funds. A number of them are held in foreign banks. There is very little in UK banks.

Q210 Mr Baker: But Governor, echoes of before the financial crisis?

Dr Carney: Echoes, but important differences. The differences are as follows: with respect to the UK, actually the least exposed banking system of the major banking systems to this issue is the UK banking system. On page 27 of our report back in July, we break out who is exposed to the most risky tranches and down.



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For the UK, the exposure is to the least risky tranches and is the smallest amount. To put a number on what Dr Kohn said a moment ago, which was about the stress test, in the stress test all these bad things happened—problems in China, a trade war, UK recession and so on—and challenges in the leveraged loan market, plus conduct issues.

In total, the banks are hit about five and a half percentage points of capital—they lose. And 0.4 of that five and a half is from their leveraged loan exposure. So, they have exposure and we expose them against big losses but, to put it in orders of magnitude, that is where it is.

I will finish on this. The point is right. The structures are opaque and the issue is who holds those structures. They tend to be held by Asian insurance companies and pension funds, which if somebody is going to have to hold these things, that is probably where you want them to be, if you are the UK. It is different—the reason why I hesitated on echoes, is that pre-financial crisis, a lot of these structures were held by the problem we were talking about earlier: short-term money holding long-term illiquid assets and then getting hung up.

We do think some of these CLO funds will find some issues; maybe Mr Taylor would like to expand. The last point I will make from a macro-perspective, though. The re-leveraging of the US corporate sector, which is driving a lot of this, is an issue, because they will have less flexibility if there is a downturn.

Martin Taylor: All the good points have been made but I will try one or two things. You started your questions with something about the risk of global recession. There has been a substantial global slowdown. The global economy has slowed from roughly 4% growth to roughly 3% growth, and that is a big change.

If the trade war gets worse and the Chinese indebtedness bites, it could get worse. I don't think we are talking about a recession globally, but we are certainly talking about the risks of continued slowdown. We are concerned about these pockets of excessive indebtedness. They are not mostly here, as my colleagues have said.

There was a rather interesting essay in the Financial Stability Report last December, specifically comparing the leverage lending boom to the subprime mortgage before the financial crisis, which did raise the odd eyebrow, but on the whole it was more reassuring than worrying. I am going to read it again, having heard your questions.

One thing that is happening within lending, when we look at corporate bonds, for example, we tend to look at the investment grade market, which on the whole we do not worry about much, and then the high-yield market, which is clearly riskier. What has been happening within investment grade is that the number of issues that are at the very bottom of the investment grade has gone up.



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So, the composition of what is in investment grade has deteriorated. That means that, if you get an economic shock, it only takes one downgrade for them suddenly to flip into high yield. That would have a big impact on portfolio choices.

Q211 **Mr Baker:** There is clearly much more to be said about all of this, but I am very conscious that I have a duty to move on to some of the other public questions, if I may.

Martin Taylor: I will stop there.

Q212 **Mr Baker:** Thank you. I may blanch a bit as I raise this one, because it is not my usual territory. We have had a question from Twitter about the stress tests you have done, factoring in potential capital flight resulting from no deal, and what that might mean for the current account deficit. Governor, perhaps you might like to say something. To what extent is there a risk of capital flight?

Dr Carney: Could you repeat the question, Mr Baker? Sorry, I enjoyed that.

Q213 **Mr Baker:** Yes, very funny.

Dr Carney: In the stress test, we don't explicitly say capital flight, but what would happen with capital flight is in the stress test. There is a very sharp fall in sterling—almost by a third. To be absolutely clear, we are not predicting that. There is a sharp fall in sterling and an increase in credit spreads that goes beyond a standard deviation—quite a material increase in the cost of borrowing of banks and companies. What also happens, which would be consistent with capital flight but is unusual, is that the yield curve steepens quite a bit, so the cost of 10-year gilts—the yield on 10-year gilts—goes up quite substantially. A capital flight, or a stress situation in financial markets, is consistent with a fall in the value of the exchange rate and a rise in the yield on Government debt. We do quite severe movements in all of that, and then there are knock-on effects—for example, commercial real estate prices fall almost 30%, which again would be consistent with foreign investors pulling money out. That is at the heart of the stress tests, so it is the right question to ask. Again, these are stress scenarios—extreme scenarios—but that is what we have to do in order to make sure collectively we can sleep at night when a much milder version of that transpires.

Q214 **Mr Baker:** Thank you. In another question, which reminds us that the public are not to be taken for granted, Keir Dhillon from Gloucester asks: "Is the Bank of England and European Union Bank Euro-Sterling swap-line in place?"

Dr Carney: Thank you, Keir, for that question. Yes, it is in place. For the last several months, we have been running weekly auctions in euros of an unlimited size if necessary. Banks have prepositioned collateral; they are not borrowing. Banks have tested whether the facility "works"—our facility; there is no issue with the ECB's facility with us. It is in place and will be in place for the foreseeable future. It is pretty unlikely that there will be major drawings on it, just because of the liquidity positions that the



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banks are in, but it is possible that they have lots of liquidity in dollars and not in euros at a given point, so they draw on us to offline. That is exactly why it is there. There is a reciprocal swap line that we have with the ECB in sterling, if they need to draw on that for EU27 banks.

Q215 Mr Baker: Am I okay to go on to QE? I'll do it briefly. Mr Goldspink from Hull has sent us an email about house prices, leading into QE. He says: "I cannot buy a house at the current average price to average wage ratio without sacrificing my standard of living considerably. If the ratio was at historical levels; i.e. 3 to 4 times the average wage, I would buy a house tomorrow. To what extent has the quantitative easing programme increased house prices, making them largely unaffordable?"

Dr Carney: Okay. Thank you, Mr Goldspink. I sympathise with the challenges that he faces. Housing affordability is a challenge. It is first and foremost driven by supply-demand dynamics in the country. I repeat that it continues to strike me that there are twice as many people in the United Kingdom as there are in my native Canada, and the same number of houses are built every year in the United Kingdom as in Canada. It is not like the desire for household formation—the desire for people to move into houses—is less in the United Kingdom than it is in Canada. Obviously, it is easier to build houses in Canada—there is a lot more space, and various things—but it reinforces this dynamic.

A low interest rate environment as a whole has supported a series of asset prices, including house prices. That said, low interest rates and QE have supported the economy alongside, so if we look across the country—I don't have the figures for Wales right in front of me—house prices since 2007 are up around 22% to let's say 25%, rounded up, but income is up 30% since 2007, so actually house prices have been expensive here for quite some time. The actual house-price-to-income level has moved slightly favourably. That does not make it easy for individuals who are in stretched environments but, as a whole, the income payback for the economy has exceeded.

The second thing, which is more directly the responsibility of the Committee, has been to make sure the systems can lend at higher loan-to-income ratios where appropriate and do so responsibly. Affordability in terms of debt service has improved quite a bit. The debt service position of borrowers as a whole is now substantially below historical averages. The average debt service ratio is around 1%, versus a peak prior to the crisis of 2.5%. That is a big difference and it means that the system is that much more resilient.

The housing market is a challenge up and down this country. Our job is to make sure that the financial system is there to support it and to make sure as many people are in work as possible, subject to achieving the inflation target, earning wages that give them a chance of moving on to the housing ladder.

Q216 Mr Baker: Thank you. For the record, I will just repeat the gentleman's name—Mr Goldspink. The last question is from Stuart Gosling; apparently



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the staff received a volume of emails related to QE. He asks, "Quantitative easing was a necessity after the 2008 banking crisis. But its benefits are skewed towards the wealthiest. Therefore, is it not time to wind down quantitative easing and look for other ways to boost the economy that work for the majority?" Dr Kohn, perhaps you might give the Governor a break on that one. The essence of the question is, is there a policy instead of QE that works for the majority on stimulating the economy?

Donald Kohn: As a member of the Financial Policy Committee, I am not supposed to comment on UK monetary policy.

Dr Carney: I'd better take it. We have done fairly extensive analysis through a variety of speeches and working papers on the impact of quantitative easing on the economy as a whole. The most intense period was immediately after the crisis of course. We are left with a stock of quantitative easing—we are not actively buying new assets, as you know. We estimate that it raised GDP by about eight percentage points; it raised average household incomes by a similar amount—about £2,000 per head. That is not of the wealthiest cohort but an average across income groups. It reduced the unemployment rate by about four percentage points. That is a fairly comprehensive payback.

I have the figures through to 2016—I don't have them right up until today. The main impact of quantitative easing, although it is not the only factor that affects it, is that inequality in this economy, whether measured by income or wealth, went down over that period. That is always a surprise, but that is the evidence if you measure by quintiles or divide into fifths. That is because a lot more people were in work and there was some boost to their incomes. House prices were maintained. Home ownership is not universal but it is relatively high.

One of the issues is that not many people buy that—those are the statistics but they don't buy it. One of the ways to square the circle, just in terms of perception, is that real incomes for a long period after the crisis were not growing; in fact, it took a long time for them to come back, so the inequalities that existed prior to the crisis become more salient or poignant in that environment. As a whole, more people are in work and there is more income than otherwise would have been. Obviously, it is called an unconventional policy for a reason, and it is not the first port of call.

Mr Baker: Thank you all very much, and I thank the public who helped me by sending in some questions—

Chair: That otherwise you would not have asked.

Q217 **Alison McGovern:** Can I begin by asking a question of anyone on the panel on a subject that, despite the wide-ranging session, so far has not come up? What do you all make of recent events with Facebook's foray into cryptocurrency, and what consideration is the Bank making of that innovation?



Donald Kohn: The Bank and the Financial Policy Committee are taking this very seriously. We have promulgated some principles that we believe should lie behind the regulation of something like this. Libra has a couple of interesting challenges: first, it is international; and secondly, it is by Facebook, so it could scale up very rapidly and become systemic. Therefore, it is a concern for the Financial Policy Committee, and we have enunciated several principles we think should guide the Bank and the other regulators in looking at this. They need to look at the systemic issues and make sure that they have visibility into all parts of the system from beginning to end, from the payer to the payee and all the little pieces in between; that they have the data and the information; and that it is all viable and resilient. There are a lot of challenges here: there are crypto challenges; there are challenges with anti-money laundering and keeping criminal activity at bay; and there is the protection of consumers. Do the consumers know what they are getting? This is called stable coin. Is it really stable? How stable will it be? Do people understand that?

Q218 **Alison McGovern:** This Committee did an investigation into cryptocurrency, and we found the potential for the door to open to many of the risks that you have just articulated. Isn't it legitimate for policy makers to ask Facebook, "Why are you bothering? Why is this for you?"

Dr Carney: Let me say a couple of things. First, in terms of how this will or will not proceed—we have said this a few times but I want to reiterate it—it will not be like social media. This will not be a case where something gets up and starts running and then the system tries to figure out after the fact how it is going to regulate it. It is either going to be regulated and overseen properly or it is not going to happen. That is the view of this Committee, it is the view of the Bank of England, and I believe it is the view of the G7 and will be the view of the G20, including the Financial Stability Board. We will crystallise those views over the course of this week but, having had enough analysis and looked at it, I am confident in that statement.

Secondly, we have an ability to regulate it. It is not perfectly aligned because it is something new, but we have that ability partly under payments legislation—to the extent to which it is money, we have a regulatory attachment point—and we have influence, as does the FCA, with other parts of the financial system that would be connected to this as a system. That goes to Dr Kohn's first point about the system as a whole.

Let's go to the "Why are you bothering?" question. I want to flip that around. Why should we bother? Globally, you have substantial financial exclusion of people who are not part of the formal financial system, and you have very expensive cross-border payments for most individuals. There have been improvements in that, but most people pay far too much to send money across borders. It is money out of their pocket, and it undercuts the competitiveness of businesses, particularly small businesses.

Domestically, we have to face up to the fact that, on one level, we have a quite convenient payment system in this country—debit is the payment of



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choice, and it is easy to tap and to go online—but it is expensive. Those transactions cost 50 to 200 basis points, and it can take the business up to three days to get the money. That is not good enough in this day and age.

Those payments should be instantaneous. It should be the same as us exchanging a banknote online. It should be instantaneous, it should be virtually costless, and it should be 100% resilient. There are different ways to solve that, but the challenge—this is the UK—is to bring online payments and other payments up to a standard that is found in a number of major emerging economies, and a few advanced economies.

Q219 Alison McGovern: It sounds like the subject of a future Treasury Committee inquiry. Moving on, Governor, you gave an excellent exposition of the situation that we face regarding climate change and the role of the capital markets and their investments. I think everybody will be struck by the comments you made. I think I am right in saying that those investments are consistent with climate warming north of 4°.

I just want to ask one specific follow-up question on that. You referenced that the remit of the regulators would normally be given out at the same time as funding decisions are taken. With regard to what Parliament can do, it seems that we have a crucial crunch point coming up, in relation to the Budget. To aid us in our work of scrutinising the Government, can I ask the panel what you might expect to be in those remits? What do you think should be in those remits, specifically in relation to climate change?

Dr Carney: You know, I am going to take a sort of principled stand. I don't want to crowd anyone out, but I don't think it is for us to say what is in the remit; it really is for us to receive the remit from the Government and Parliament—

Q220 Alison McGovern: Give us your professional advice.

Dr Carney: But it is a question of the democratic accountability of it. We are instructed by Parliament, through the Government. We are instructed to do certain things. Those instructions, as you know, have to be consistent with the legislation and the Bank of England Act, but the interpretation of, or the emphasis within, that legislation is provided by those remit letters and the Government. Then we go off and do our best to try to achieve that, and we are judged against that.

I am just uncomfortable. I will say that we have independently recognised that there are financial stability risks with respect to climate, and there are safety and soundness risks with respect to climate risk, and we have taken action because that is consistent with the remit. What is being discussed, and mentioned in public by Mr Glen, is that there may be regard to the COP 21 Paris commitments, and the remit letters for the FPC and the PRC may be adjusted in that direction. That would be consistent with what we have been doing. I am uncomfortable trying to suggest exactly how the Government do that, or any other aspect of—

Q221 Alison McGovern: Does anyone else feel more comfortable about giving the Government a lecture?



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Sam Woods: Can I add one more comment to that? We have been absolutely rigorous across the Bank, including the FPC and the PRC, particularly where a lot of the action has been, to make sure that everything that we are doing on climate change comes back to the statutory objectives, which get set for us by you and your colleagues here in Parliament. We are sure that we are doing that. It would not be unhelpful if, when the Government come through on their commitment to include a recommendation in our remit letter, they can draw that connection and be clear that what is being asked of us is to pursue those objectives, to the extent that they bear on climate change, which they clearly do. I expect that that is what the Government will choose to do.

Martin Taylor: Could I chip in? It is not precisely on that, but I am tying it back to the question asked earlier by Rushanara Ali about our stress test. The fact that we are doing this is very important. We use these biannual stress tests to ask questions that we are afraid the financial sector is not asking itself. We did that with the "low for long", and I think they found it very useful and very valuable.

On the climate scenario, the response from the banks has actually been very positive. It has been saying, "Thank you for helping us do this." What we are trying to get to is a way of measuring. The most hopeful thing for me is what the Governor said about fund managers now being able to put a temperature number on their portfolios. This seems to me an enormously important advance, if only because, whether you are running a bank, a business or a hospital, what you can't measure, you can't manage. The introduction of measurement is absolutely crucial, and I think it will be the turning point in this battle. I am actually rather encouraged about what is going on right now.

Q222 **Alison McGovern:** But with respect, we have been able to measure these issues for decades.

Martin Taylor: The improvement in precision in what people can do—people have measured their carbon footprint. Being able to measure the weight of a portfolio is actually rather new.

Q223 **Alison McGovern:** Okay. I will move on, but I think it probably takes policy decisions as well as measurement. Sorry to return to previously covered subjects, but I want to ask a relatively straightforward question that Members of Parliament are asked all the time by the public about Brexit. Governor, you gave a very professional answer about the place of traders, particularly on foreign exchange on their holding short positions. Let us be blunt about it: the public suspect that quite a few wealthy people might stand to make a lot of money out of a no-deal Brexit. Would they be right?

Dr Carney: Some in the financial markets will make money whichever direction Brexit takes. On no deal, some people will become wealthier as a consequence, yes. Others will become poorer. They will be outnumbered by the number who will become poorer.

Q224 **Alison McGovern:** This has been a subject of pretty intense public



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debate over the past few weeks. Do you think that is a legitimate concern?

Dr Carney: I refer to my previous answers on the functioning of the foreign exchange market and the financial market. A market requires people to have different views and different perspectives. Then events happen and one of those perspectives is validated and prices adjust.

Martin Taylor: We have had a very strange situation in which, for a long time, because of Brexit uncertainty, the value of the pound has been wrong, but we have not known whether it is too high or too low.

Dr Carney: That is right.

Martin Taylor: It is one or the other. When you get that sort of volatility in that situation, we all become currency speculators. People start wondering whether they should buy their foreign exchange for the next summer holiday. Companies that are importing buy their foreign currency earlier, sell their sterling as soon as they can and hold on to foreign exchange. You get very big speculative positions being built up by people who are not speculators or short sellers, but their change in behaviour can have very big impacts on financial markets.

Q225 **Alison McGovern:** It is almost like radical political change might have an economic impact, but anyway, I will leave that there.

I have a specific question for you, Mr Woods. In a recent letter to the Chair of the Committee, the Governor said that looking at "UK-based banks' cash business, around three-quarters of business with EU clients is now in a form where it could continue after the UK leaves the EU." Could you just comment on the other quarter of the businesses, particularly if the UK leaves without a deal?

Sam Woods: To be clear, this is about the clients of UK banks—that is the first point to be made. I think that the top line on this is that the UK banks that are based here in the UK and have had to restructure outwards have done quite well in terms of establishing new entities in the EU27 with which their EU27 clients can do business following a no deal. As we sit here today, our latest estimate is a tiny bit higher than the number that you had in your letter from Dr Carney. By revenues, probably around 80% of those are repapered or are able to make use of exemptions, which there are.

For the remaining 20%, there could be a variety of things, and of course that number could increase between now and the end of the month. I do not think that it will ever quite reach 100, because some clients will just say, "Okay, we're actually no longer going to trade with that UK-based entity's new Frankfurt office. Instead, we're just going to channel that part of our business into an EU27 bank."

Q226 **Alison McGovern:** In relation to the Financial Stability Report and the checklist on page 5, where you have green and amber ratings for the various impacts and risk management, I want to ask about personal data and, in particular, personal data risks. Clearly, from a consumer



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perspective, a large number of people in the United Kingdom might have issues. What would you say the public should be most concerned about or on the lookout for?

Sam Woods: We are a bit concerned about that issue, for the reason that the UK has committed to finding the EU what is called GDPR compliant and therefore data flows will be okay going in that direction, but the EU, consistent with its position on some other issues, has not undertaken to make the same finding in relation to the UK, even though the UK has, at least as far as I can tell and certainly in our sphere, implemented the GDPR very thoroughly. That could potentially impede the flow of data across the border.

However, firms have been aware of this and we have been talking to them about it, and there are things they can use called model clauses, which are essentially clauses blessed by the authorities that allow the transfer of data from one jurisdiction to another, even in the absence of a GDPR equivalence finding. That has come up before—for instance, between Europe and the US.

One thing, which I don't really think your constituents should be worried about, but the Committee should be aware of, is that there is a long-standing case, involving a complainant called Schrems, that is questioning whether those model clauses are really valid. As it happens, we expect the ECJ to come to a judgment on that, potentially in December. If that went the wrong way, that could potentially undermine the mitigation that that mechanism provides.

Alison McGovern: Okay. Do you want to add something, Dr Carney?

Dr Carney: Well, there is that and—just while you are on the subject of the checklist—what comes after the checklist in that report and in our most recent record are other risks that could cause disruption to financial services but are unlikely to cause financial stability risks. The way to think about it is that if the ones with the colours are the premier league, this is the championship. It is important, but it doesn't—and Mr Woods referenced earlier the issue around euro area payments and direct debits. One of the changes you will see between the July report and the most recent record, which came out last week, is that it notes this potential issue around direct debits, which would be a potential inconvenience—that may be a mild way of putting it—for people but does not affect the system, and which the FCA and others are working on. It is a European issue that affects us—that is, I guess, the best way to put it—and that the FCA is working on addressing.

Q227 **Alison McGovern:** Okay, great. I have a few quick-fire questions from the public, so stand by. This one is from Fraser Danbury via Twitter: "If banks and top-rated funds can do it, why can't the MPC"—Monetary Policy Committee—"be replaced with an algorithm?" Answer that.

Dr Carney: Oh, the Monetary Policy Committee—that's me.

Donald Kohn: It's an MPC question; he didn't ask about the FPC!

Alison McGovern: Clearly, the FPC is art, not science, but anyway.

Dr Carney: The use of machine learning and advanced artificial intelligence techniques is something that has been brought into the Bank, and into not just financial forecasting but decision making. In effect, machine learning and AI, which is a more sophisticated version of algorithms—these are prediction machines; they are about making predictions. And then the judgment is: what do you do with that prediction, given where the economy might be under these circumstances? What is the appropriate stance of policy, taking all the considerations into account?

There are very few banks at this stage—in fact, I know of none—that have been replaced by algorithms. There are certain funds that use algorithms very heavily for short-term arbitrage, but again, for longer-term structural issues, they are not there. So, it is a way off—it will certainly not occur during my period as Governor.

Q228 **Alison McGovern:** I am going to resist asking lots more questions about that. With regard to the FPC and the MPC, we have had an email asking the Committee to ask Mark Carney why we cannot have 50:50 representation of men and women on the committees. There must be enough suitable women. In addition, why are there no disabled people?

Dr Carney: On the decisions—perhaps the questioner doesn't know this—we do not decide who is on the committee. Appointments to the committee are made by the Government. I do not have the ability to make that happen.

Q229 **Alison McGovern:** Do you have a view about what might make it happen?

Dr Carney: What we can do to enhance the probability that it will happen is increase the proportion of women at the Bank and in our senior ranks—obviously we spend a tremendous amount of time on that. Of the top 80-plus senior people at the Bank over the last five years, we have moved from 17% to 32% female. We have moved our recruiting to just under 50% female. We have quadrupled the number of universities and post-secondary institutions at which we recruit. We have shifted our external recruiting for experienced hires to increase the proportion of women, BAME and differently-abled individuals as well. And there are a host of other policies to increase diversity in terms of gender identity, background, socioeconomic group and cognitive perspective. We have written to the Committee on these issues, but it should be absolutely clear that the decisions on who is on these committees are decisions of the Government; they are not our decisions. I ask that the TSC aid in making that clear to the broader public. I do not think it is realistic to ask me, "Why don't you change the numbers on the committee?" because I can't.

Rushanara Ali: You could if you were Chancellor.

Q230 **Alison McGovern:** We have had lots of emails from many people who are concerned about the impact of low interest rates on savers, and



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particularly those saving for retirement, which I am sure is an issue that you think about a lot. In particular, Mr and Mrs Burnill from Leeds have asked: when are you going to stop penalising savers and raise interest rates?

Dr Carney: That is a monetary policy question, so I will take that. The first thing to say is that I have tremendous sympathy for people like the Burnills—couples and people who have worked hard for their lives and put money aside and are earning much lower returns on their savings than they ever would have thought possible. We have to set interest rates for the economy as a whole, consistent with the remit we have to bring inflation to 2% and, subject to doing that, to support growth and jobs in the economy. By and large, that is what this policy has accomplished: inflation is just a bit below target, we have record employment, and wages are growing at their fastest rate since the financial crisis.

Across the economy as a whole, it is very difficult for people who have savings and no other financial assets. A relatively small proportion of the population fall into that camp of people who have more than £5,000 of savings but do not have other financial assets and/or do not own their own home. If they have the other financial assets and/or own their home, in general during this period of low interest rates the value of those assets has gone up quite substantially. So, across age cohorts, people on the whole—there will always be exceptions—are better off.

For the Burnills, the challenge is that there are very big forces globally, and some domestically, including the uncertainty about the outlook, that have meant that the level of interest rates at which this economy operates at full employment—so that their neighbours, children and grandchildren, if they have them, are in work—is at a historic low. That is partly a product of the trade war that was discussed earlier; it is partly a product of demographics and ageing societies globally; it is partly a product of a reordering of the global economy so that emerging economies are becoming more important than advanced economies such as the UK; and it is partly a product of things such as technology and the earlier question about artificial intelligence, and those technologies coming into the economy.

What tends to happen—I will stop on this—when you have transformative technologies, is that for a period of time, while you are figuring out how to replace the MPC with an algorithm, productivity goes down. Hopefully not at the MPC, because we are hitting our target, but in the economy as a whole. Those factors are helping to drive where interest rates are. The question of whether interest rates are at the right level is seen a few years ahead of whether inflation is at the right level and whether the economy is operating in an equilibrium.

Q231 **Alison McGovern:** Yes, indeed. On the final question, I must apologise, because this is also not really one for yourselves, but we asked the public what questions they would like to ask you. It is one about which you might have an opinion, however, and about which the Committee might also ask the ONS in future. James Fox emailed to ask us if we could ask



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you, "Why do we use an inflation figure for a basket of goods that do not represent what people buy every month...(for example, including things like computer games, DVD players), instead of using a representative basket of what people buy every month (food, toilet paper, energy bills)?" Why do we include things that are a relatively rare purchase as compared with other things that will actually hit people in their shopping most weeks?

Dr Carney: The consumption basket of the consumer price index is what the ONS, the statistical agency, looks to do. We do not devise it; they devise it. It is a representative basket of what people consume over the course of a year. Some of those items will be higher frequency, so I think bread was in the example. Buying a loaf of bread every week and buying a computer game maybe every few months or so when a new one comes out have similar weights in the consumption basket.

On average, a computer game is much more expensive than a loaf of bread, but it is a similar weight in the overall consumption that people have over the course of a year across the country. The CPI basket ultimately has about 130,000 individual goods, goods services and price points in it. It gives that representative sense of what people consume over time, as opposed to targeting high frequency purchases.

I would make one other point, which is that very high frequency purchases such as food and petrol are actually the prices that we can least influence. They will bounce around when the exchange rate goes up or down. If there is a geopolitical event in the Gulf and the price of oil changes, petrol moves around. We cannot swing around interest rates and quantitative easing on a week-to-week basis to try to dampen those out, but we can affect the overall level in the short-to-medium-term horizon.

Alison McGovern: An interesting question. Didn't the public do well?

Dr Carney: Very well.

Q232 **Rushanara Ali:** I have a couple of quickfire questions. Mr Milton asks, "Are inequality and...lack of opportunities for social mobility likely to increase due to Brexit?". Would you like to answer that question, Dr Carney?

Dr Carney: Would I like to start on that question?

Rushanara Ali: When you sat back, I thought you did.

Dr Carney: The contribution that we can make as a Financial Policy Committee to social mobility and inequality is to make sure that the system is there, and it is there through tough times and that viable businesses do not go out of business because of challenges in the financial system. That is something that would exacerbate regional disparities and undermine equality. Our core work supports flexibility in the economy.

Q233 **Rushanara Ali:** But the regional disparities will get exacerbated?

Dr Carney: I am saying the extent to which what we do leans against—we have talked in the past about the potential regional impact of Brexit.

Q234 **Rushanara Ali:** So the answer would be yes, in relation to regional implications?

Dr Carney: In terms of regional disparities, the regions most likely to be severely affected are Northern Ireland, the midlands, the north-east and the north-west. That is an exacerbation of regional disparities. The region least affected is London.

Rushanara Ali: So the answer is yes?

Dr Carney: That is the assessment. It is the assessment of the Government; it is the assessment of external parties. If you add up the assessments of individual businesses—

Q235 **Rushanara Ali:** The Government's November analysis indicates that, under a free trade scenario, output would be 5% less in the long term, compared with remaining within the EU. Does the Bank agree with this analysis?

Dr Carney: The Government have been in the position of providing long-term assessments. We have only done scenarios for the purposes of stress testing, and in direct response to a horizon that is consistent with the Monetary Policy Committee's horizon, which is two to three years. We have not published, and don't intend to publish, longer-term trade impact scenarios. Maybe I can just refer back to our November document, which looks at various levels of partnership that are possible.

Q236 **Rushanara Ali:** This is my last question. This is a question from Tim Ellwood from Ascot: "Do you understand...the damage that the Bank has done to the UK economy by quoting worst case scenarios about the economy relating to Brexit such as house prices falling 30 per cent or GDP to fall by x per cent, only to say later oops sorry it is not going to be as bad as we thought?" Obviously, just to caveat that, the Committee asked for the Bank to provide those scenarios. Perhaps the Governor and others would like to response to that exasperated statement.

Dr Carney: Thanks to Mr Ellwood for his comment. We have to make sure the system can withstand whatever is thrown at it. We have talked about challenges from trade wars, challenges from "low for long" and challenges from a hard Brexit. It is not easy to get the financial system in a position where it can withstand not just one of those but all of those, but it is necessary to stress them against these types of extreme scenarios. It was very clear when we released that not just that it was in response to the Committee's understandable request—we wouldn't have released it otherwise—but that it was a means to an end and a means to make sure the system was prepared.

In terms of the aggregate confidence of businesses and households, you didn't see a big shift. The shifts of confidence, particularly for businesses, have been related to the uncertainties around Brexit—not concerns, quite rightly, about the preparedness of the financial system. We are not going



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to apologise for doing our job. We are sitting here potentially a couple of weeks from a cliff edge, and we can sleep at night because the system is ready. The reason why the system is ready is that we stressed it against that. Whether in Ascot, Aberdeen or wherever across the country, people can rely on the core of the system to serve them.

Rushanara Ali: The answer to Mr Ellwood is that he will be able to sleep at night better.

Sam Woods: Perhaps we could put the question back to Mr Ellwood: how would he feel if he had a central bank and a regulator that, with a view to something bad that might happen, said, "Let's not worry about it"? I don't think he would think that we were doing our job.

Rushanara Ali: Great. Thank you very much.

Martin Taylor: The release of the scenario was supposed to be reassuring.

Q237 **Chair:** Thank you. There are no more questions. I want to say a very sincere thank you for your co-operation with what has been a slightly new format. In my mind, I think it has added not only to the challenge but to the interest and the overall explanation and accessibility to the public. I know you are as committed to achieving that as we are. Thank you very, very much. That is the end of this session. I don't think we will meet with you again, Governor, in this capacity before your time is up.

Dr Carney: It depends. We have a monetary policy report that comes out in November, so some time between November and January—

Chair: I don't mean in your capacity as Governor; I mean as the Financial Policy Committee.

Dr Carney: Let's hope you don't meet me again in that capacity.

Chair: Thank you very much indeed.